DOCUMENT RESUME

ED 228 202 SP 022 044

AUTHOR Miller, W. Wade
TITLE An Evaluation of the Effectiveness of Video-Cassette Modules in Influencing Students' Perceptions of Selected Teacher Characteristics. (A Pilot Study).
PUB DATE Apr 83
NOTE 13p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Agricultural Education; Higher Education; Learning Modules; *Methods Courses; Preservice Teacher Education; Student Evaluation of Teacher Performance; *Teacher Characteristics; Teaching Styles; *Videotape Cassettes; *Vocational Education Teachers

ABSTRACT

An evaluation study was made of a project which developed videocassette learning modules featuring outstanding vocational agriculture teachers illustrating their teaching methods. The two-fold purpose of the study was to determine what teaching characteristics were considered most important by students, and whether viewing the videotapes influenced the students' perceptions of selected teaching characteristics. Subjects were 24 agricultural education students divided evenly into experimental and control groups. The Teaching Appraisal Scale (TAS) was administered to the class prior to their division into groups. The TAS is designed to assess a teacher's possession of 20 selected teaching characteristics and their perceived value. The experimental group viewed three videotapes which had been developed for evaluation. The study found that the most highly valued teaching characteristics were: enthusiasm shown by the teacher for teaching; ability to explain clearly; and giving clear and precise directions. There were few measurable changes in ratings by the experimental group after viewing the tapes. Tables present information on pre- and post-test rankings of the selected teacher characteristics, and a comparison of the responses of the two groups. A list of the 20 characteristics on the TAS is included. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

AN EVALUATION OF THE EFFECTIVENESS OF VIDEO-CASSETTE MODULES IN INFLUENCING STUDENTS' PERCEPTIONS OF SELECTED TEACHER CHARACTERISTICS
(A Pilot Study)

W. Wade Miller
Assistant Professor

Agricultural/Secondary Education
Iowa State University

ED228202

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
W. Wade Miller

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

✓ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

SP 022 044

AN EVALUATION OF THE EFFECTIVENESS OF VIDEO-CASSETTE MODULES IN INFLUENCING STUDENTS' PERCEPTIONS OF SELECTED TEACHER CHARACTERISTICS
(A Pilot Study)

W. Wade Miller
Assistant Professor

Agricultural/Secondary Education
Iowa State University

Agricultural education depends heavily on experiential learning. The "Learning by Doing" approach has been one of the foundations of agricultural education since its inception. This approach relies on the assumption that students learn best when they "experience" the process. They relate their background and past experiences to teaching. In the past almost all agricultural education students were from a farm background, had taken vocational agriculture in high school, and had participated in Future Farmers of America. They could rely on their experiences to be of value to them in learning how to become vocational agriculture teachers. Instructors in agricultural education classes could also expect the large majority of their students to have had these experiences. While the number of students with these experiences is still sizeable, there is a rapidly growing number of students from town and small acreages who may not have taken vocational agriculture in high school or participated in FFA. Many of these students have not seen a vocational agriculture teacher in action. Also, they may have had limited agricultural experiences and may not have an understanding of the way FFA relates to classroom instruction.

Various experience programs in Agricultural Education at Iowa State University have been developed to address this problem. One of the courses developed requires students to visit a vocational agriculture program for a four-day period during their sophomore year. Also, students visit the school to which they are assigned to student teach for a five-day period

SP 022 044

immediately prior to taking the teaching methods class.

The teaching methods class is the last class students take prior to student teaching. The overall goal of this class is to help the students develop their ability to teach. It is difficult for some students to understand the importance of the characteristics of good teaching. It was felt that one of the ways to possibly make these teaching characteristics more meaningful to the students may be through the use of video tapes.

In July, 1981, an Instructional Development Grant was funded through Iowa State University. The primary purpose of the project was to develop video-cassette learning modules utilizing outstanding vocational agriculture teachers to illustrate the teaching methods they use in the classroom. One of the objectives of this project was to evaluate the effectiveness of video-cassette learning modules in influencing students' perceptions of teaching characteristics. During the Fall, 1982 semester an evaluation was conducted to determine the outcome of this objective.

Purposes

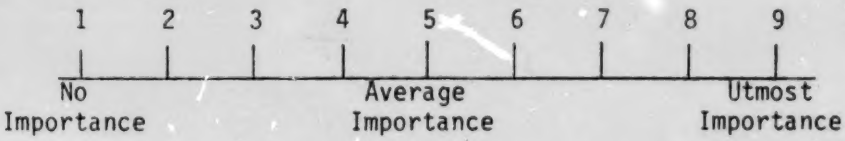
The specific purposes of this evaluation were:

1. To determine what teaching characteristics are considered to be the most important by the students.
2. To determine if the students' perceptions of selected teaching characteristics could be influenced by having them view and evaluate three, one-hour video-tapes.

Procedure

The design of the study was pretest-posttest control group as defined by Leedy (1974) utilizing the Fall, 1982 methods class as subjects. The twenty-four students enrolled in Ag. Ed. 411, Methods of Teaching Vocational Agriculture, all agreed to take part in the study. They were randomly divided into two groups of twelve using a table of random numbers.

The instrument used in the study was the Teaching Appraisal Scale (TAS) developed by the College of Education staff at Iowa State University in 1976. This scale was developed to evaluate the effects of the Teaching Assistants Orientation Seminar (TAOS) at Iowa State University. TAOS's objective is to help teaching assistants to develop their teaching skills. The scale is designed to assess two dimensions of teaching; the teacher's possession of a particular teaching characteristic and its perceived value. For the purposes of this evaluation the TAS was divided into the separate parts and the scale was changed from 1-5 to 1-9. The response scale on Form 1 for perceived value or importance is:



The TAS importance scale, Form 1, was administered to the entire group of twenty-four students. The reason for administering the TAS, Form 1, to all students was two-fold. First, this provided an opportunity to acquaint the students with the twenty teaching characteristics and to offer written explanations, Form 3, of each characteristic. Secondly, with the small number of students in each group the possibility existed that the two groups would not rate the items equally. Those items not rated the same by both groups could be discounted.

After administering Form 1, the class members were informed of the group to which they had been assigned. The designations were group 1 and 2. Group 1, the experimental group, had three weeks in which to view three, one-hour video tapes of outstanding first year teachers. They used the TAS, Form 2, to evaluate the three presentations. TAS, Form 2, is designed to assess a teacher's possession and exhibition of teaching characteristics

during a lesson.

The video-tapes represented three teachers using different methods of teaching in an actual classroom situation. The tapes were prepared under the direction of the researcher.

After three weeks, Form 1 was again administered to the entire class. Group 2 then had three weeks to view and evaluate the video-tapes.

Statistical treatment of the data included ranking, tabluation of means and standard deviations as descriptive statistics. Following the procedure outlined by Bruning and Kintz (1977), data were compared using the t-test for independent means and analysis of variance, treatments-by-subjects design.

Results

The pretest rankings, means, standard deviations, and t-test results for the twenty teaching characteristics are presented in Table 1 on a total sample and subsample basis. As a total sample, respondents tended to feel that the five most important characteristics for a teacher to possess and exhibit were: motivation, ability to explain concepts, giving directions and assignments clearly, sensitivity to students, and ability to organize subject matter. On a subsample basis, the experimental group rated knowledge of subject matter and eye contact with students much higher than did the control group. The differences in means were significant at the .10 level. These differences may have resulted from the small sample size and varying understanding of the two characteristics. It should be noted that the two characteristics considered to be least important were facial expressions and gestures used by teachers.

Table 1

PRETEST. RANKINGS, MEANS*, STANDARD DEVIATIONS AND t-VALUES FOR THE TWENTY TEACHING CHARACTERISTICS LISTED ON THE TAS.

Teaching Characteristics	Total Rank	Total Mean / S.D.	Experimental Group Rank	Experimental Group Mean / S.D.	Control Group Rank	Control Group Mean / S.D.	t-value
Motivation	1	8.50 / 0.52	1	8.58 / 0.45	1	8.42 / 0.63	0.53
Ability to Explain	2	8.33 / 0.84	2	8.42 / 0.63	2	8.25 / 1.11	0.45
Directions and Assignments	3	8.04 / 0.56	5	7.83 / 0.52	2	8.25 / 0.57	1.40
Sensitivity	4	7.96 / 1.17	5	7.83 / 1.06	3	8.08 / 1.36	0.55
Organization	5	7.88 / 1.07	5	7.83 / 0.88	4	7.92 / 1.37	0.21
Sense of Accomplishment	6	7.79 / 0.95	5	7.83 / 0.70	6	7.75 / 1.30	0.19
Answers	7	7.75 / 0.72	6	7.67 / 0.61	5	7.83 / 0.88	0.44
Instructional Level	8	7.63 / 1.11	6	7.67 / 1.15	7	7.58 / 1.17	0.20
Questions	9	7.46 / 1.04	7	7.58 / 0.81	8	7.33 / 1.33	0.58
Eye Contact	10	7.42 / 1.73	4	7.92 / 0.63	10	6.92 / 2.45	1.97[a]
Ability to Speak Effectively	10	7.42 / 1.99	9	7.08 / 1.54	6	7.75 / 2.39	1.17
Objectives	11	7.25 / 2.20	8	7.25 / 1.84	9	7.25 / 2.75	0.00
Teacher's Knowledge	11	7.25 / 2.37	3	8.00 / 0.55	14	6.50 / 3.18	2.69[a]
Readiness	12	7.13 / 1.24	10	7.00 / 1.45	9	7.25 / 1.11	0.54
Grammar	13	7.04 / 1.87	8	7.25 / 1.30	11	6.83 / 2.52	0.74
Use of Media	14	6.67 / 1.45	11	6.58 / 0.99	12	6.75 / 2.02	0.34
Voice Modulation	15	6.54 / 0.95	12	6.50 / 0.82	13	6.58 / 1.17	0.19

Correct Rate of Speech	16	6.33 1.80	12	6.50 0.64	15	6.17 3.06	0.59
Facial Expressions	17	6.21 1.22	12	6.50 0.64	17	5.92 1.72	1.31
Gestures	18	6.00 0.87	13	5.92 1.17	16	6.08 0.63	0.41

*9 = utmost importance, 1 = no importance

[a] Significant at the .10 level (22 degrees of freedom - table value = 1.717)

In Table 2, the posttest rankings, means, standard deviations, and t-test results are shown on a total group and subgroup basis for the twenty teaching characteristics. As a total group the five characteristics rated highest in importance were: motivation, ability to explain concepts, giving directions and assignments clearly, responses to student's answers, and the ability to speak effectively. The experimental group placed the highest importance, in order, on motivation, ability to explain, sensitivity to students and giving directions and assignments clearly, while the control group placed ability to explain highest, followed by motivation, responses to student answers, and giving directions and assignments clearly. One characteristic, sensitivity to students, was rated significantly higher by the experimental group at the .10 level. The two characteristics rated lowest in importance by the entire group was voice modulation and gestures used by teachers.

Table 3 contains a pretest-posttest comparison of the experimental group rankings, means, and F-values for the twenty teaching characteristics. This comparison is on a repeated measures basis and was conducted to find out whether or not they differed to a degree larger than could be expected

Table 2

POSTTEST. RANKINGS, MEANS*, STANDARD DEVIATIONS AND t-VALUES FOR THE TWENTY TEACHING CHARACTERISTICS LISTED ON THE TAS.

Teaching Characteristics	Total Rank	Total Mean / S.D.	Experimental Group Rank	Experimental Group Mean / S.D.	Control Group Rank	Control Group Mean / S.D.	t-value
Motivation	1	8.46 / 0.52	1	8.58 / 0.63	2	8.33 / 0.42	0.83
Ability to Explain	1	8.46 / 0.52	2	8.42 / 0.63	1	8.50 / 0.45	0.27
Directions and Assignments	2	7.88 / 0.90	4	7.92 / 0.63	4	7.83 / 1.24	0.18
Answers	3	7.83 / 0.75	7	7.67 / 0.79	3	8.00 / 0.73	0.92
Ability to Speak Effectively	4	7.79 / 1.04	5	7.83 / 0.52	5	7.75 / 1.66	0.19
Sensitivity	5	7.75 / 1.33	3	8.17 / 1.06	9	7.33 / 1.33	1.85[a]
Organization	6	7.71 / 1.00	6	7.75 / 0.57	6	7.67 / 1.52	0.19
Instructional Level	7	7.67 / 1.19	8	7.58 / 0.99	5	7.75 / 1.48	0.37
Sense of Accomplishment	7	7.67 / 1.10	9	7.50 / 1.18	4	7.83 / 1.06	0.76
Questions	8	7.63 / 1.03	8	7.58 / 0.99	6	7.67 / 1.15	0.21
Readiness	9	7.58 / 0.78	8	7.58 / 0.45	7	7.58 / 1.17	0.00
Eye Contact	10	7.50 / 1.22	5	7.83 / 1.42	10	7.17 / 0.88	1.49
Teacher's Knowledge	11	7.42 / 1.73	5	7.83 / 0.52	12	7.00 / 2.73	1.59
Objectives	12	7.38 / 1.29	10	7.25 / 1.11	8	7.50 / 1.55	0.53
Use of Media	13	7.08 / 1.38	11	7.08 / 1.54	11	7.08 / 1.36	0.00
Correct Rate of Speech	14	7.00 / 1.13	12	7.00 / 1.09	12	7.00 / 1.27	0.00

Grammar	15	6.92 0.78	12	7.00 0.36	13	6.83 1.24	0.46
Facial Expressions	16	6.87 1.33	13	6.92 1.17	13	6.83 1.61	0.18
Voice Modulation	17	6.75 1.07	14	6.83 0.88	14	6.67 1.33	0.37
Gestures	18	6.71 1.78	12	7.00 1.82	15	6.42 1.72	1.07

* 9 = utmost importance, 1 = no importance

[a] Significant at the .10 level (22 degrees of freedom -- table value = 1.717)

to by chance. At the .10 level, the ability to speak effectively was rated higher at the conclusion of the evaluation with a change in mean from 7.08 to 7.83. Also, teacher's appropriate use of gestures was rated significantly higher at the .05 level at the end of the evaluation. The mean changed from 5.92 to 7.00

Conclusions and Recommendations

The following conclusions and recommendations were drawn from the analysis and interpretation of data in the evaluation:

1. The teaching characteristics valued most highly by the respondents were:
   a. Motivation. Overall enthusiasm shown by a teacher for teaching.
   b. Ability to Explain. Use of analogies, examples and demonstrations to translate concepts into ideas.
   c. Directions and Assignments. Giving clear, precise directions for work in or out of class.
2. In general, there were few measurable changes in ratings after the treatment. The experimental group's viewing and evaluation of the three video tapes may have caused them to rate teacher's

Table 3

PRETEST-POSTTEST COMPARISON OF EXPERIMENTAL GROUP RANKINGS, MEANS, AND F-VALUES FOR THE TWENTY TEACHING CHARACTERISTICS LISTED ON THE TAS.

Teaching Characteristics	Pretest Rank	Pretest Mean	Postest Rank	Postest Mean	F
Motivation	1	8.58	1	8.58	0.00
Ability to Explain	2	8.42	2	8.42	0.00
Teacher's Knowldege	3	8.00	5	7.83	0.67
Eye Contact	4	7.92	5	7.83	0.07
Directions and Assignments	5	7.83	4	7.92	0.19
Sensitivity	5	7.83	3	8.17	1.14
Organization	5	7.83	6	7.75	0.06
Sense of Accomplishment	5	7.83	9	7.50	0.54
Answers	6	7.67	7	7.67	0.00
Instructional Level	6	7.67	8	7.58	0.05
Questions	7	7.58	8	7.58	0.00
Objectives	8	7.25	10	7.25	0.00
Grammar	8	7.25	12	7.00	0.58
Ability to Speak Effectively	9	7.08	5	7.83	4.56[a]
Readiness	10	7.00	8	7.58	2.37
Use of Media	11	6.58	11	7.08	0.83
Voice Modulation	12	6.50	14	6.83	1.37
Correct Rate of Speech	12	6.50	12	7.00	2.53
Facial Expressions	12	6.50	13	6.92	1.09
Gestures	13	5.92	12	7.00	6.76*

[a] Significant at the .10 level (1, 11 degrees of freedom -- table value = 3.23)

* Significant at the .05 level (1, 11 degrees of freedom -- table value = 4.84)

sensitivity to students significantly higher than did the control group at the .10 level. Also, the pretest-posttest comparison of the experimental group showed evidence of an increase in the ratings of the teacher's ability to speak effectively (.10 level of significance) and the appropriate use of gestures (.05 level of signicance).

3. Due to the small number of subjects, this evaluation should be repeated with another class and the results combined. The resulting increase in N would allow analysis of covariance to be used with the pretest scores as covariates.

References

Bruning, James L. and B.L. Kintz. Computational Handbook of Statistics. Scott, Foresman and Company, Glenview, Illinois, 1977.

Leedy, Paul D. Practical Research, Planning and Design. Macmillan Publishing Co., New York, 1974.

TEACHING APPRAISAL SCALE

The following are twenty characteristics which teachers may possess and exhibit. An explanation is given for each characteristic. Use the explanation to help you fill out Forms 1 and 2.

1. EYE CONTACT. Attempts to communicate an interest in students by consistently looking at individuals in class during lectures, discussions, and question/answer sessions.
2. VOICE MODULATION. Pleasant variations in speech that do not distract, but add interest and make the teacher pleasant to listen to.
3. ABILITY TO SPEAK EFFECTIVELY. Good use of the English language, spoken so you can understand it, with a vocabulary appropriate for the students.
4. GESTURES. Appropriate but restrained use of arms, and general movements of teacher, used for emphasis but not as evidence of nervousness.
5. FACIAL EXPRESSIONS. Appropriate but restrained use of smiles, frowns, and other expressions that imply satisfaction or dissatisfaction with student responses.
6. QUESTIONS. Pleasant and acceptable techniques for asking questions in a non-threatening manner.
7. ANSWERS. Appropriate responses to student answers, including verbal and non-verbal mannerisms that encourage further discussion.
8. MOTIVATION. Overall enthusiasm shown by teacher, creating an atmosphere of importance and significance for the subject being taught, making students want to learn more about it.
9. ABILITY TO EXPLAIN. Use of analogies, examples, demonstration and other techniques to translate concepts into understandable ideas.
10. OBJECTIVES. Clear statements, fairly frequent, outlining what students are expected to be able to do after instruction in class.
11. DIRECTIONS AND ASSIGNMENTS. Clear, precise directions for work in or out of class, including assignments, tests, projects, etc.
12. USE OF MEDIA. Transparencies, slides, filmstrips, films, videotapes, and other media used as a part of the instructional process.
13. ORGANIZATION. Logical, systematic sequential presentation of ideas and concepts, leading to students' progressive understanding of the subject being taught.
14. SENSITIVITY. The empathy and understanding the teacher has for students in the class as shown by willingness to answer questions, give individual help, and work with students.
15. CORRECT RATE OF SPEECH. Comfortable (for you) pace of teacher's speech--not too slow, not too fast--either in class or during individual help.
16. GRAMMAR. Proper use of the language, with normally accepted sentence construction.
17. INSTRUCTIONAL LEVEL. Difficulty of material appropriate for students' background and understanding and ability to comprehend the ideas presented.
18. TEACHER'S KNOWLEDGE. Degree of understanding the teacher has about the subject matter.
19. SENSE OF ACCOMPLISHMENT. The degree of well-being, self-worth, and "comfortableness" students have in the class, created by the teacher, the subject matter, and other factors associated with the course.
20. READINESS. The teacher's assessment of students' prior knowledge and ability, and degree of adjustment made in the teaching to fit the instruction to students' readiness.